"Lactate Shift", rather than "Lactate Clearance", for serial blood lactate monitoring?

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Reprints:
No reprints will be ordered. Address for reprints per corresponding author.

Financial support:
No financial support was sought nor required for this letter to the editor

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Indexing key words:
lactate; shock; sepsis; definition

Dear Editor

We read with interest Vincent's letter citing our work on blood lactate in septic patients admitted to intensive care, and broadly agree with the points he raised.[1] The term "lactate clearance" has been used for over 20 years in the critical care literature and was originally defined as “the ability to clear lactate to normal levels”.[2] We agree that the use of the term clearance is problematic because in a strict physiological sense clearance is a measure of the volume of blood cleared of a substance per unit of time. Conceptually lactate clearance is also misleading because it ignores the fact that lactate concentration is a product of synthesis as well as clearance.

Despite this limitation, the measurement of lactate clearance in septic patients is widely used because it is straightforward, clinically useful and independently predicts poor outcome.[3-5] Vincent, too, supports serial measurement of lactate but in denouncing the term 'lactate clearance' he does not suggest an acceptable alternative. [1]

We propose using the term "lactate shift" as it describes a change in lactate concentration over time and avoids the use of physiological terminology that has a well recognised alternative interpretation.

CA Walker, DM Griffith, AJ Gray, D Datta, AW Hay

[1] Vincent J-L. Serial Blood Lactate Levels Reflect Both Lactate Production and Clearance. *Critical Care Medicine*. 2015;43(6):e209. doi:10.1097/CCM.0000000000000995.

[2] Abramson D, Scalea TM, Hitchcock R, Trooskin SZ, Henry SM, Greenspan J. Lactate clearance and survival following injury. *J Trauma*. 1993;35(4):584-589.

[3] Walker CA, Griffith DM, Gray AJ, Datta D, Hay AW. Early lactate clearance in septic patients with elevated lactate levels admitted from the emergency department to intensive care: time to aim higher? *Journal of Critical Care*. 2013;28(5):832-837. doi:10.1016/j.jcrc.2013.02.004.

[4] Nguyen HB, Rivers EP, Knoblich BP, et al. Early lactate clearance is associated with improved outcome in severe sepsis and septic shock*. *Critical Care Medicine*. 2004;32(8):1637-1642. doi:10.1097/01.CCM.0000132904.35713.A7.

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